

4 March 1964

25X1

Point Transfer Device & High Precision Stereo-viewer

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Discussion with in an attempt to resolve joystick and control panel considerations. We agreed to the following recommendations:

1. Joystick

- a. A multicontrol, human-engineered, joystick of the fighter plane variety is desirable.
- b. Satisfactory to design and place joystick for exclusively right hand operation.
- c. Distance from the center of the operators normal position be no greater than that in the model 387.
- d. Following controls are most desired to be available on joystick:
 - (1). Individual suppression of translation of the left or right objectives.
 - (2). Fire laser, L or R or B.
 - (3). Data read-out L or R or B.
 - (4). Zoom control L or R or B.
 - (5). (Optional) high intensity illum L or R or B.
 - (6). (Optional) rotation of direction of travel. L or R or B.
 - (7). One means of accomplishing the above degree of control at the joystick would be to have a single three position switch which would be a master control for Left, Right or Both. This switch could be on the joystick or on the control console.

2. Control Console

- a. Assuming that the joystick is in fixed position in the work space for right-hand operation only, it is apparent that there is no longer a requirement for the remainder of the controls (those not located on

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the joystick) to be movable from the left to right of the operator. It is likewise apparent that the logical permanent position for these controls is at the operator's left hand. It is therefore concluded that the control console with the control panel on top should be designed for left-hand operation.

b. In turn, it is now apparent that the operator's work space on the right could be continuous with the center portion, thus relieving the area desired for the placement of the joystick. Extension of the right hand work space to the right of the operator should be considered.

c. The control console should contain the following:

- (1). Power switches.
 - (a). Master.
 - (b). Enhancers.
 - (c). Laser.
 - (d). Counter.
- (2). General Illumination switches and controls.
 - (a). On-off, left; on-off, right.
 - (b). Coaxial intensity control; top knob, left; bottom knob, right.
- (3). Reticle Illumination and controls, same as c(2) above.
- (4). Vacuum control switches.
 - (a). On-off, left; on-off right.
- (5). Objective selector switches.
 - (a). Independent series of touch-coded, push-button switches to control the objective turret position; one set of four for each turret.
- (6). Loop-forming control.
 - (a). One three position rocker switch L-N-R, form loop from left, Neutral form loop from right.

- (b). One two position switch hold loop, release loop - loop to be removed by manual control with switch in release loop position.
- (7). Point-mark number.
 - (a). Two manually and/or automatically advanced counters, one set for left one for right.
 - (b). May be located on control console or near center of work space at edge of viewing area.
- (8). Rotation control for direction of travel.
 - (a). Under the concept of joystick placement described herein, paras. 1a, 1b, 2a, and 2b, it is not practical to have the direction of travel controls on the work space in the immediate vicinity of the joystick. Instead it is recommended that this be accomplished through servo systems which are controlled from the joystick or the control panel.
 - (b). Panel controls. Knobs for left and right through ten turn pots with setting indicators on the knobs.
 - (c). Joystick control (optional). Three position switch; Clockwise, Neutral Counterclockwise, resting in Neutral. Switch operates through the master Left-Both-Right switch, controls pots with knobs and indicators described in (8)(b) above. See also 1d(6).
- (9). High Intensity Illumination Control - optional on joystick or control console - see 1d(5). This requires:
 - (a). On-off, left; on-off, right.
 - (b). Coaxial intensity control top knob, left; bottom knob, right.
- (10). Master Left-Both-Right Switch - optional on control console or joystick - see 1d(7).
 - (a). Two modes of three position operation desired; in one mode switch returns to Both, in the other mode switch stays set in Left-Both or Right.

(b). Controls the channels affected by the following actions:

- (1). Fire laser, see ld(2).
- (2). Data read-out, see ld(3).
- (3). Zoom up-down, see ld(4).
- (4). High intensity illumination, optional, see ld(5).
- (5). Rotation of travel direction optional, see ld(6).
- (6). Individual suppression of translation of the left or right objectives, see ld(1). It is recommended that this have a separate Both-Left Right control on the joystick. Perhaps a three position trigger switch would be best for this. No duplicate control on console would be required.